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| 10/542,763 | 01/17/2006 | Oleg Stenzel | 274674US0PCT | 9218 |
| 22850 | 7590 | 03/04/2008 | | |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | EXAMINER PARVINI, PEGAH | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/542,763 | Applicant(s) STENZEL ET AL. | |
| | Examiner PEGAH PARVINI | Art Unit 1793 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 10-15, 18 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 16, 17, and 19-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20051013</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-9, 16, 17, and 19-21 in the reply filed on February 11, 2008 is acknowledged. The traversal is on the ground(s) that the lack of unity has not been met. This is not found persuasive because US Patent No. 6,180,076 disclose a substantially similar process of making as that claimed in the instant invention as detailed in the previous Office Action; furthermore, the said process results in a product, precipitated silica, having substantially same physical chemical properties with mostly overlapping ranges in, for example, BET, CTAB, Sears value, etc. Thus, since the limitations of Group I claims and Group II claims fail to define a contribution over prior art, US 6,180,076, they fail to constitute a special technical feature and hence, there is lack of unity between the claims of the cited Groups.

The requirement is still deemed proper and is therefore made FINAL.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

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F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-9, 16, 17, and 19-21 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8, 18, 19, 23, and 30 of copending Application No. 10/542,850. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim precipitated silica with anticipatory or overlapping ranges of physical and chemical properties such as CTAB, BET, DBP, Sears value, etc. The use claims 19-20 of the instant application read on the claims 23 and 30 of the copending Application No. 10/542,850.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

4. Claim 19 provides for the use of silicas in elastomer mixtures, etc., but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it

merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 19 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

The “use” is not statutory and in the event the claim is rewritten, it may be withdrawn from consideration as directed to a non-elected embodiment and the finality of any Office Action will be maintained.

5. Claim 20 provides for the use of silicas in battery separators, antiblocking agent, matting agent, etc., but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 20 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

The "use" is not statutory and in the event the claim is rewritten, it may be withdrawn from consideration as directed to a non-elected embodiment and the finality of any Office Action will be maintained.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 6-9, 16-17, and 19- 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,846,506 to Esch et al. in view of US Patent No. 5,935,543 to Boyer et al.

8. Regarding claim 1, Esch et al. teach a precipitated silica with the following physicochemical properties: BET surface area of 35 to 350 m²/g, CTAB surface area of 30 to 350 m²/g, DBP value of 150 to 300 ml/100g, and Sears value V2 of 6 to 20 ml, wherein the ratio of Sears value to BET surface area, when calculated, would fall within the range of about 0.017 to about 0.57 (columns 1 and 2).

Esch et al. disclose a composition having overlapping ranges of physicochemical properties for the same composition with instant claims. Even though the reference does not disclose an anticipatory example or range which is sufficiently specific to

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anticipate the present claims, as noted above, the reference teaches overlapping ranges of physiochemical properties for the same composition with the present claims. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05. Therefore, it would have been obvious, at the time of the invention, to have selected the overlapping portion of the range because overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05.

With reference to moisture level, it is noted that the Esch et al. disclose substantially similar precipitated silica with overlapping ranges of physicochemical properties wherein said precipitated silica have substantially similar intended use. The prior art do not expressly disclose a moisture level; however, Esch et al. disclose a substantially similar process of making (column 2, lines 42-65) for the precipitated silica which has similar intended use such as in vulcanizable rubber mixture.

Esch et al. disclose that said invention exhibits better properties such as higher modulus, lower $\tan \delta$ as a measure of tire rolling (column 5, lines 46-54).

9. Furthermore, Boyer et al., also drawn to precipitated silica having similar physicochemical properties such as overlapping ranges of CTAB, 140 to 185 m²/g, and DBP, 210 to 310 cm³/g, expressly disclose that variation in the parameters and/or conditions during production result in variations in the types of precipitated silica produced (Abstract; column 1, lines 20-23; column 2, lines 12-15, 25-27).

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the disclosure of Esch et al. in order to include the

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moisture level of 4-8% motivated by the fact that different properties can be achieved by variation in parameters and/or conditions during the production of silica as that taught by Boyer et al.

10. Regarding claim 2, Esch et al. disclose BET surface area of 35 to 350 m²/g (column 1, lines 45-50; column 2, lines 14-20, 31-35).

11. Regarding claim 3, Esch et al. disclose that their precipitated silica has CTAB surface area of 30 to 350 m²/g (column 1, lines 50-55; column 2, lines 35-40).

12. Regarding claim 4, Esch et al. disclose the range of 6 to 20 for the Sears value (column 1, lines 48-52; column 2, lines 34-37).

13. Regarding claims 6 and 7, Esch et al. disclose DBP value of 150 to 300 ml/100g (column 1, lines 52-55; column 2, lines 37-40).

14. Regarding claim 8, Esch et al. disclose ranges for Sears value and BET surface area wherein upon calculation of the ratio of Sears value to BET, a range of about 0.017 to about 0.57 is obtained (columns 1 and 2).

15. Regarding claim 9, based on the disclosure of Esch et al. regarding BET and CTAB values, a ratio of about 1.00 to about 11.16 is obtained (columns 1 and 2).

16. Regarding claim 16, Esch et al. disclose the same or substantially identical structure for the organosilanes used to modify the precipitated silica (column 2, lines 65-67; column 3, lines 1-40).

17. Regarding claim 17, Esch et al. disclose a similar organosilane compound used to modify the precipitated silica, based on formula (III), $R^1_n(RO)_{3-n}Si(Alkenyl)$, in which $n=3$ and $R1$: alkyl (column 3, lines 5-14). It is noted that based on the recitation of claim 17 of " $SiR^2_{4-n}X_n$ (where $n=1,2,3,4$)" as one type of organosilanes, and considering $n=1$, X : alkenyl, and $R2$: alkyl, Esch et al. reads on the limitations of claim 17.

18. Regarding claim 19, Esch et al. disclose the use of said silica in any rubber applications such as, for example, tires, conveyor belts, seals, V-belts, tubes, shoe soles, etc. (column 4, lines 30-34). In addition, Esch et al. disclose the use of said silica in vulcanizable rubber compounds (column 3, lines 42-45).

19. Regarding claim 20, Boyer et al. disclose that use of precipitated silica for battery separators are known; thus, one skilled in the art would have appreciated the use of said silica with the physical chemical properties as detailed above as a batter separator.

20. Regarding claim 21, Esch et al. disclose a precipitated silica incorporated into vulcanizable rubber compounds (used in rubber applications such as tire, conveyor

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belts, seals, V-belts, tubes, etc.) with the following physicochemical properties: BET surface area of 35 to 350 m²/g, CTAB surface area of 30 to 350 m²/g, DBP value of 150 to 300 ml/100g, and Sears value V2 of 6 to 20 ml, wherein the ratio of Sears value to BET surface area, when calculated, would fall within the range of about 0.017 to about 0.57 (columns 1 and 2).

Esch et al. disclose a composition having overlapping ranges of physicochemical properties for the same composition with instant claims. Even though the reference does not disclose an anticipatory example or range which is sufficiently specific to anticipate the present claims, as noted above, the reference teaches overlapping ranges of physiochemical properties for the same composition with the present claims. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05. Therefore, it would have been obvious, at the time of the invention, to have selected the overlapping portion of the range because overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05.

With reference to moisture level, it is noted that the Esch et al. disclose substantially similar precipitated silica with overlapping ranges of physicochemical properties wherein said precipitated silica have substantially similar intended use. The prior art do not expressly disclose a moisture level; however, Esch et al. disclose a substantially similar process of making (column 2, lines 42-65) for the precipitated silica which has similar intended use such as in vulcanizable rubber mixture.

Esch et al. disclose that said invention exhibits better properties such as higher modulus, lower tan δ as a measure of tire rolling (column 5, lines 46-54).

21. Furthermore, Boyer et al., also drawn to precipitated silica having similar physicochemical properties such as overlapping ranges of CTAB, 140 to 185 m²/g, and DBP, 210 to 310 cm³/g, expressly disclose that variation in the parameters and/or conditions during production result in variations in the types of precipitated silica produced (Abstract; column 1, lines 20-23; column 2, lines 12-15, 25-27).

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the disclosure of Esch et al. in order to include the moisture level of 4-8% motivated by the fact that different properties can be achieved by variation in parameters and/or conditions during the production of silica as that taught by Boyer et al.

22. Claims 1-9, 16-17, 19- 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,180,076 to Uhrlandt et al. in view of US Patent No. 5,935,543 to Boyer et al.

Regarding claims 1 and 21, Uhrlandt et al. teach precipitated silica which can be mixed into vulcanizable rubber mixtures as a reinforcing filler and generally has applicability in rubber applications such as tires, conveyors, etc. wherein said precipitated silica has the physical chemical properties such as BET surface area of 120-300 m²/g, CTAB surface area of 100-300 m²/g, Sears value of 6-25 ml, DBP index

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of 150-300 g/100g (Abstract; column 1, lines 33-50; column 2, lines 5-35; column 3, lines 33-35; column 5, lines 28-33). The ratio of Sears value to the BET surface area may be calculated; this would fall within the range of about 0.02 to about 0.208; therefore, there is overlapping ranges of this property with in the instant invention.

Uhrlandt et al. disclose a composition having overlapping ranges of physicochemical properties for the same composition with instant claims. Even though the reference does not disclose an anticipatory example or range which is sufficiently specific to anticipate the present claims, as noted above, the reference teaches overlapping ranges of physiochemical properties for the same composition with the present claims. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05. Therefore, it would have been obvious, at the time of the invention, to have selected the overlapping portion of the range because overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05.

With reference to moisture level, it is noted that the Uhrlandt et al. disclose substantially similar precipitated silica with overlapping ranges of physicochemical properties wherein said precipitated silica have substantially similar intended use. The prior art do not expressly disclose a moisture level; however, Uhrlandt et al. disclose a substantially similar process of making (column 2, lines 42-65) for the precipitated silica which has similar intended use such as in vulcanizable rubber mixture.

Uhrlandt et al. disclose that said precipitated silica can be dispersed significantly better in rubber mixtures (column 1, lines 34-36).

23. Furthermore, Boyer et al., also drawn to precipitated silica having similar physicochemical properties such as overlapping ranges of CTAB, 140 to 185 m²/g, and DBP, 210 to 310 cm³/g, expressly disclose that variation in the parameters and/or conditions during production result in variations in the types of precipitated silica produced (Abstract; column 1, lines 20-23; column 2, lines 12-15, 25-27).

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the Uhrlandt et al. in order to include the moisture level of 4-8% motivated by the fact that different properties can be achieved by variation in parameters and/or conditions during the production of silica as that taught by Boyer et al.

24. Regarding claim 2, Uhrlandt et al. disclose that the precipitated silica had a BET surface area of 120-300 m²/g (column 1, lines 40-45; column 2, lines 5-35).

25. Regarding claim 3, Uhrlandt et al. disclose that the precipitated silica has CTAB surface area of from 100 to 300 m²/g (column 1, lines 40-45; column 2, lines 5-35).

26. Regarding claims 4-5, Uhrlandt et al. disclose that the precipitated silica has Sears value of 6-25 (column 1, lines 40-45; column 2, lines 5-35).

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27. Regarding claims 6-7, Uhrlandt et al. disclose the range of 150-300 g/100g for the DBP index value (column 1, lines 40-45; column 2, lines 5-35).

28. Regarding claim 8, based on the disclosure of Uhrlandt et al., the ratio of Sears value to BET surface area would fall within the range of about 0.02 to about 0.208 which has overlapping ranges with the instant claim.

29. Regarding claim 9, Uhrlandt et al. disclose a ratio of BET/CTAB of from 0.8 to 1.3 (column 1, lines 40-45; column 2, lines 5-35). It is again noted that there is overlapping ranges of this ratio with the instant application.

30. Regarding claim 16, Uhrlandt et al. disclose that the precipitated silica has been modified with organosilane compounds of the formulas as that taught in columns 3 and 4 of said reference (columns 3-4).

31. Regarding claim 17, Uhrlandt et al. disclose a similar organosilane compound used to modify the precipitated silica, based on formula (III), $R^1_n(RO)_{3-n}Si(Alkenyl)$, in which $n=3$ and R^1 : alkyl (column 3, lines 5-14). It is noted that based on the recitation of claim 17 of " $SiR^2_{4-n}X_n$ (where $n=1,2,3,4$)" as one type of organosilanes, and considering $n=1$, X : alkenyl, and R^2 : alkyl, Uhrlandt et al. reads on the limitations of claim 17.

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32. Regarding claim 19, Uhrlandt et al. disclose the use of said silica in any rubber applications such as, for example, tires, conveyor belts, seals, V-belts, tubes, shoe soles, etc. (column 5, lines 28-33). In addition, Uhrlandt et al. disclose the use of said silica in vulcanizable rubber compounds (column 4, lines 33-35).

33. Regarding claim 20, Uhrlandt et al. disclose the use of said precipitated silica in battery separators (column 5, lines 31-33).

34. Regarding claim 20, Boyer et al. disclose that use of precipitated silica for battery separators are known; thus, one skilled in the art would have appreciated the use of said silica with the physical chemical properties as detailed above as a batter separator.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent Application Publication No. 2002/0022693 to Luginsland

US Patent No. 2003/0082090 to Blume et al.

US Patent No. 2003/0162881 to Panz et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PEGAH PARVINI whose telephone number is (571)272-2639. The examiner can normally be reached on Monday to Friday 8:00am-4:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael A Marcheschi/
Primary Examiner, Art Unit 1793

/P. P./
Examiner, Art Unit 1793